

T541 Flat Panel Monitor User Guide

ENGLISH

First Edition (September / 2002)

Note : For important information, refer to the Monitor Safety and Warranty manual that comes with this monitor.

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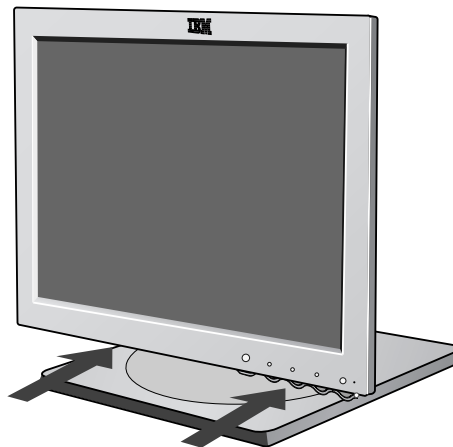
Setting up the monitor

System Hardware Requirements

This monitor requires a computer with a suitable on-board sub-system or Video Adapter card that can support XGA 1024 x 768, SVGA 800 x 600, or VGA 640 x 480 at 60Hz.

Handling Instructions

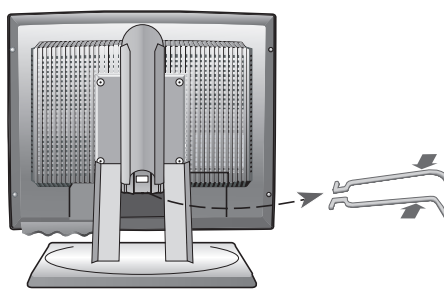
1. Do not support the monitor within the screen area. The Liquid Crystal Display is glass and can be damaged by rough handling or excessive pressure.



2. Before using your monitor for the first time, remove the clear protective film from the front of the screen.

Desk Top Use - Remove the clip on stand models

Before adjusting your monitor for the first time, remove the locking clip on rear of the stand. Carefully hold the screen of the monitor and then squeeze at arrows shown to remove (figure A).

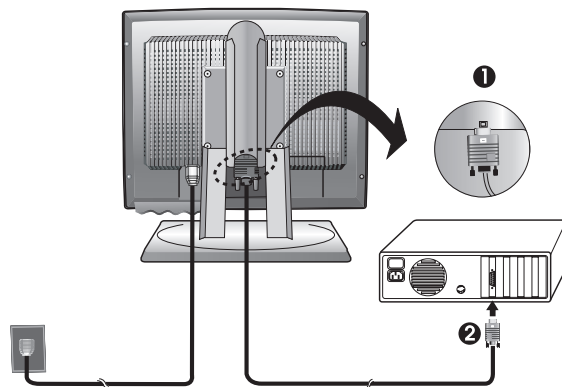


(A)

Monitor Installation

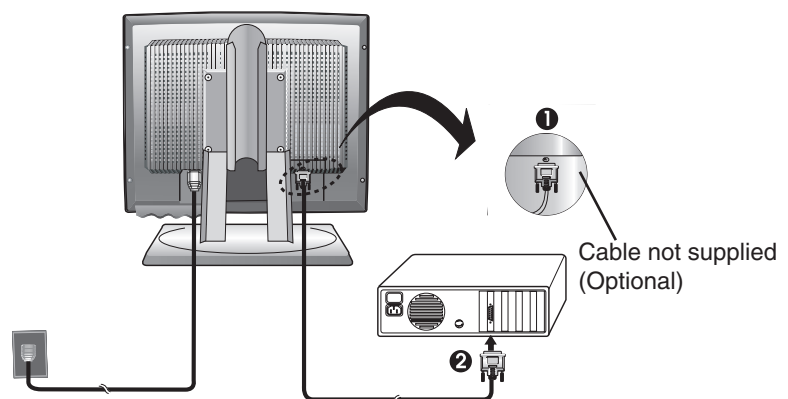
Connecting your Monitor

1. Turn off your computer and all attached devices. Next, unplug the power cord(s) to your computer and all attached devices.
2. Connect the signal cable.
The analog signal cable is already connected to your monitor. ❶ The analog connector is the blue connector.
 - When connecting the analog signal cable (Figure A)
Connect the free end of the attached signal cable to the 15-pin Monitor port on the computer and tighten screws. ❷



(Figure A)

- If connecting a DVI-D digital signal cable (Figure B)
Connect one end of the monitor signal cable to the white connector ❶ on the rear panel of the monitor. Connect the other end to the white connector ❷ on the rear panel of the computer and tighten the screws.



(Figure B)

-
3. Connect the power cord to the monitor and then plug the power cord into a properly grounded outlet. Next, reconnect the power cord(s) to your computer and all attached devices.
-

Switching on your Monitor

1. Switch on your monitor by pushing and releasing the power switch marked [⏻] at the front of the bezel.
[To switch off your monitor, push and release the power switch again.]
2. Switch on your computer.
3. If you are using the analog connector, run AUTO SETUP by following the instructions in the **Auto Setup** section on page 9.

Monitor Driver Installation

Driver installation for Windows 95 or Windows 98

This section must be completed before continuing with the Windows95 or Windows98 Auto Setup on page 10.

i *On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. IBM recommends using either 1024 x 768 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To use the Plug and Play feature in Microsoft®Windows®95 or Windows 98, files should be loaded from the **IBM Monitor CD**.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow the system to boot into Windows95 or Windows98.

Your computer's Plug and Play code may warn you that your system hardware has changed. This means that it has detected your new monitor for the first time.

4. Open the **DISPLAY PROPERTIES** window by clicking **START, SETTINGS, CONTROL PANEL** and then double - clicking on the **DISPLAY** icon.
5. Click the **SETTINGS** tab.

• In case of Windows 95 :

- 6 - 1. Click the **CHANGE DISPLAY TYPE** button.
2. Click the **CHANGE MONITOR TYPE** button.

• In case of Windows 98 :

- 6 - 1. Click the **ADVANCED** button.
2. Click the **MONITOR** tab.
3. Open the **UPGRADE DEVICE DRIVER WIZARD** window by clicking on **CHANGE** button and then select the **NEXT** button.
4. Click the "Display a list of the known drivers for this device so that I can choose a specific driver" and then select the **NEXT** button.
7. Insert the Setup CD into the CD driver: and click the **HAVE DISK** button.
8. Click **OK**.
9. Ensure that the CD drive letter is selected, and then select the 'Drivers' folder.
10. Choose **IBM T541** monitor and Click **OK**. The files will be copied from the CD to your hard disk drive.
11. Close all open windows and remove the CD.
12. Restart the system.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Driver Installation for Windows 2000 or Windows Me

This section must be completed before continuing with the Windows2000, Windows Me Auto Setup on page 10.

***i** On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. IBM recommends using either 1024 x 768 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To use the Plug and Play feature in Microsoft Windows 2000 or Microsoft Windows Millennium Edition(Me) files should be loaded from the **IBM Monitor CD**.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow the system to boot into Windows 2000 or Windows Me.
4. Open the **DISPLAY PROPERTIES** window by clicking **START**, **SETTINGS**, **CONTROL PANEL** and then double-clicking the **DISPLAY** icon.
5. Click the **SETTINGS** tab.
6. Click the **ADVANCED** button.
7. Click the **MONITOR** tab.
8. Click the **PROPERTIES** button.
9. Click the **DRIVER** tab.
10. Open the **UPGRADE DEVICE DRIVER WIZARD** window by clicking on **UPDATE DRIVER** and then Click the **NEXT** button.
11. Select the "Display a list of the known drivers for this device so that I can choose a specific driver" and then Click the **NEXT** button.
12. Insert the Setup CD into the CD drive : and click the **HAVE DISK** button.
13. Click **OK**.
14. Ensure that the CD drive letter is selected, and then select the 'Drivers' folder.
15. Choose **IBM T541** monitor and Click **OK**. The files will be copied from the CD to your hard disk drive.
16. Close all open windows and remove the CD.
17. Restart the system.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Driver Installation for Windows XP

This section must be completed before continuing with the Windows XP Auto Setup on page 10.

i *On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. IBM recommends using either 1024 x 768 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To use the Plug and Play feature in Microsoft Windows XP files should be loaded from the **IBM Monitor CD**.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow the system to boot into Windows XP.
4. Open the **DISPLAY PROPERTIES** window by clicking **START, SETTINGS, CONTROL PANEL** and then double-clicking the **DISPLAY** icon.
5. Click the **SETTINGS** tab.
6. Click the **ADVANCED** button.
7. Click the **MONITOR** tab.
8. Click the **PROPERTIES** button.
9. Click the **DRIVER** tab.
10. Open the **Hardware Update Wizard** window by clicking on **UPDATE DRIVER** and then Click the **NEXT** button.
11. Select the "Install from a list or Specific location(Advanced)" and then Click the **NEXT** button.
12. Insert the Setup CD into the CD drive : and click the **HAVE DISK** button.
13. Click **OK**.
14. Ensure that the CD drive letter is selected, and then select the 'Drivers' folder.
15. Choose **IBM T541** monitor and Click **OK**. The files will be copied from the CD to your hard disk drive.
16. Close all open windows and remove the CD.
17. Restart the system.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Image Setup for analog input

Auto Setup

Before carrying out this section, it is very important that the correct monitor drivers have been installed. (See pages 6 and 8)

i The Setup Utility included on the setup CD displays a test pattern of dots. It does not replace or modify the display drivers.

i The Auto Setup instructions require the monitor to be warmed up for 15 minutes. This is not required for normal operation.

i If your computer does not run with the setup CD shipped with the monitor, refer to **Manual Setup** on page 12.

i The AUTO SETUP process only applies to the current screen mode. When a new mode is selected, repeat this section to reset the monitor.

For digital input, image setup is not required.

When you first use your monitor, you must perform Auto Setup for analog input. If you are using digital input, continue with the instructions on page 13. This procedure sets up your monitor to process the video signals from your computer without image discoloration or smearing. After you perform Auto Setup, the settings are stored and used each time you turn on the monitor.

In order to optimize the displayed image a set-up utility is provided on the IBM Monitor CD. Operation of this utility is dependent on the operating system on your computer. You may choose to run AUTO SETUP for each operating system that you use. This means that if you sometimes use your monitor while running any version of Windows and sometimes also use it from within DOS (not a DOS window), you must run AUTO SETUP for both Windows and DOS. You may run versions of AUTO SETUP in any order.

Before you begin AUTO SETUP for your computer, make sure the computer video mode is set in the range of the supported screen resolution shown in the table on page 19.

You should perform AUTO SETUP for each screen mode you use.

AutoSetup for Windows 3.1, Windows 95, Windows 98, Windows 2000, Windows Me, Windows XP or Windows NT

i If the monitor is in standby mode (STANDBY ON), it may automatically turn off while you are waiting for it to warm up.

1. Turn on the monitor first; then the computer.
If the message CHECK VIDEO CABLE is displayed, or if nothing is displayed, check:
 - that the video interface cable is not connected properly.
 - the correct video adapter card is not installed.
2. Wait approximately 15 minutes, until the monitor warms up.
3. Ensure that the icon bar and tool bar, if displayed are at the bottom of the screen.
4. Insert the CD labelled 'IBM Monitor CD' into the CD drive.
5. Check the operating system installed on your computer and follow the instructions from the table below.

i The size and diversity of the dot pattern varies with the screen resolution.

Operating System	Step1	Step2	Step3
Windows 3.1	Open PROGRAM Manager	Select RUN	Type 'E:\TESTPAT' and press ENTER
Windows 95	Select START	Select RUN	
Windows 98			
Windows 2000			
Windows Me			
Windows XP			
Microsoft Windows NT®4.0			

i Position the mouse pointer at the bottom center of the screen. This allows AUTO SETUP to run properly

6. When the test pattern appears, press the Image Setup direct access button ← at the bottom of the monitor to run the image setup.
7. To clear the Image Setup test pattern, press the ESC key on your keyboard.

You have completed the monitor setup for Windows. If you use other operating systems, perform the appropriate AUTO SETUP for those systems and also see **Adjusting the image settings in DOS** on page 11.

Adjusting the image settings in DOS

i If the monitor is in standby mode (**STANDBY ON**), it may automatically turn off while you are waiting for it to warm up. If this happens, switch off the monitor and switch it on again after a few seconds.

i If you are using PC-DOS/V, change to U.S. mode by typing '**CHEV US**' and pressing **ENTER** at the command prompt. **You must use when you run DOS Auto Setup.**

i The size and diversity of the dot pattern varies with the screen resolution.

i If the screen flickers, repeat the setup several times until the flicker is minimised, or adjust it manually by following refer to **Manual Setup** on page 12.

1. Turn on the monitor first; then the computer.

If the message CHECK VIDEO CABLE is displayed, or if nothing is displayed, check:

- that the video interface cable is not connected properly.
- the correct video adapter card is not installed.

2. Wait approximately 15 minutes, until the monitor warms up.
3. Insert the CD labelled 'IBM Monitor CD' into the CD drive.
4. Display the command prompt screen of the DOS full-screen display.
5. At the command prompt, type the CD drive letter, and press ENTER.
6. Type '**TESTPATD**' and press ENTER.
7. Select from the screen the number for the color or text mode you want to setup.
8. Select from the screen the number for the video mode you want to setup.
You may repeat this process for as many of the color and video modes as you need.
9. When the test pattern appears, press the Image Setup direct access button ← at the bottom of the monitor to run the image setup.
10. To clear the Image Setup test pattern, press the ESC key on your keyboard.
11. Type '**Exit**' at the command prompt to return to Windows.

If you use other operating systems, perform the appropriate Image Setup for those systems and also see

Image Setup Windows 3.1, Windows 95, Windows 98, Windows 2000, Windows Me, Window XP or Windows NT workstation on page 10.

Manually adjusting the image settings

i If the monitor is in standby mode (STANDBY ON), it might automatically turn off while you are waiting for it to warm up.

Normally, you can complete the setup procedure using Image Setup, however, if your screen image is still distorted after you perform Image Setup or the setup CD does not run on your system, perform MANUAL SETUP.

1. Have your monitor turned on for about 15 minutes, until the monitor warms up.
2. Display the image you most frequently use on the screen.
3. Press the OSD Enter button \leftarrow at the bottom of the monitor to display the initial OSD menu.
4. Use an Arrow button (\leftarrow or \rightarrow) to select the **IMAGE SET-UP** icon \square and press the OSD Enter button \leftarrow to access the function.
5. Using an Arrow button (\leftarrow or \rightarrow), select MANUAL, press \leftarrow and then press \rightarrow once to select COARSE. Left and right arrow adjustment indicators become illuminated (see page 17).
6. Use the Arrow buttons to manually adjust to correct (as much as possible) for jitter or noise in the image, then press \square to save the changes.
7. Use an Arrow button to select FINE and press the \leftarrow button.
8. Use the Arrow buttons again to tune the image to your liking.
9. When finished, press the Exit button \square four times to exit from the OSD.

You have completed the monitor setup.

Ergonomic Considerations

Workplace Preparation

i This section gives advice on what you should consider before you set up your monitor.

Height

Position the monitor so that the top of the screen is slightly below your eye level when you sit at your workstation.

Orientation

- Choose a position that gives the least reflection from lights and windows, usually at a right angle to any windows.
- Position the monitor directly in front of you so that you do not have to twist your body to use it.
- Tilt the monitor to a comfortable viewing angle.

Working Practices

i This section gives advice on how you can work comfortably and reduce fatigue.

Rest

Take regular breaks. Vary your posture, stand up and stretch occasionally as prolonged use of computer workstations can be tiring.

Back

Sit back in your chair and use the backrest.

Hands

Use a light touch on the keyboard, keeping your hands and fingers relaxed. Allow a space in front of the keyboard to rest your wrists when not typing. Consider using a wristpad.

Eyesight

Working with monitors, in common with any prolonged close work, can be visually demanding. Look away from the screen periodically and have your eyesight checked regularly.

Screen settings

Set the screen brightness and contrast to a comfortable level. You may have to adjust these settings as the lighting changes during the day. Many application programs let you select color combinations which can help you to view in comfort. See the **User controls** section on page 15 for more information.

Adjusting the Monitor Position

i With the IBM Flat Panel Monitor, you can adjust its position in various ways for maximum comfort.

Viewing Angle

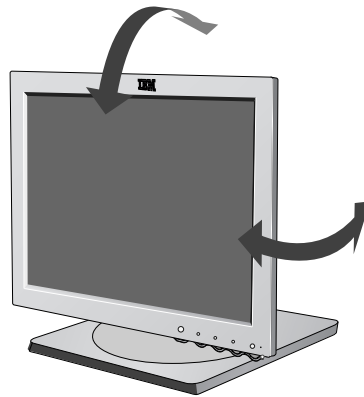
You can tilt the screen forward and backward as shown below (figure A).

Swivel

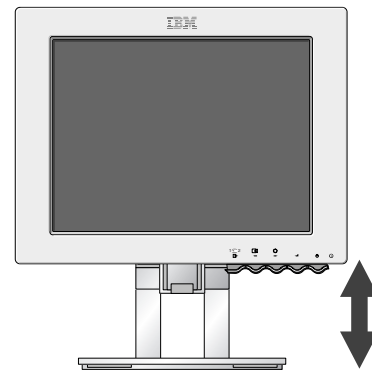
You can swivel the screen leftward and rightward as shown below (figure A).

Height

You can adjust height of the screen (figure B).



(Figure A)



(Figure B)

Caring for your Monitor

Be sure to turn off the power before you perform any maintenance on the monitor. Clean your monitor as follows:

- Gently wipe the covers and the screen with a soft cloth.
- Remove finger marks and grease with a damp cloth and mild detergent.
- Never use flammable cleaning materials to clean your IBM monitor or any other electrical apparatus.

Adjusting Your LCD Monitor

User controls



USER CONTROL FEATURES

Icon	Monitor controls
	Switches the monitors on and off.
	Display main OSD menu and selects highlighted menu item.
	Moved the cursor to highlight icons or make adjustments.
	Exits from current OSD menu.

***i** The image is already optimized for many display modes, however the user controls can be used to adjust the image to your liking.*

***i** The settings are saved after adjustment and when exiting the OSD and will be effective thereafter.*

Icon	Direct Access Functions
	Bring up Brightness adjustment.
	Bring up auto image setup.
	CONTROLS LOCK / UNLOCK This feature allows you to secure the current control settings, while allowing the user to adjust Brightness or Contrast, so that they cannot be inadvertently changed. Push and hold the enter button[↵] for 10 seconds; the message "Controls Locked" appears. You can unlock the OSD controls at any time by pushing the enter button[↵] for 10 seconds; the message "Controls Unlocked" will appear.
	Switch between input signals.

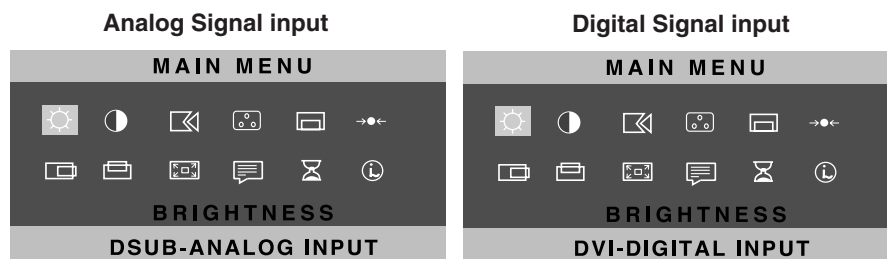
On-screen display (OSD) controls

***i** The LCD monitor needs time to become thermally stable the first time you turn it on each day. Thus, to achieve more accurate adjustments for parameters, allow the LCD monitor to warm up (be On) for at least 15 minutes before making any screen adjustment.*

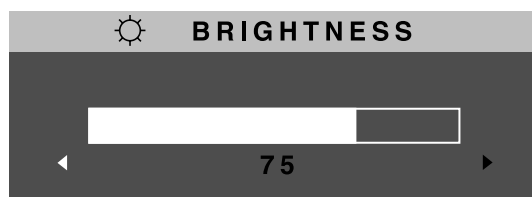
The settings adjustable with the user controls are viewed through the On - Screen Display (OSD). Press the enter button [↵] to display the main OSD menu.

Initial appearance of OSD


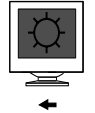
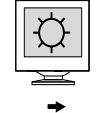

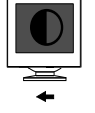
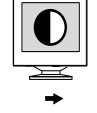

main menu;












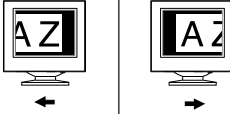

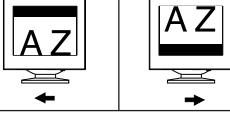




sub menu;



OSD functions

OSD Icon	Description	sub-menu(s)	Control and Adjustments
 BRIGHTNESS	Adjusts brightness		 
 CONTRAST	Adjusts contrast		 
 IMAGE SET-UP	The IMAGE SET-UP function is used to adjust the level of noise in the video signal which causes horizontal lines or areas on the screen where the image appears to be unstable and jitters or shimmers. This can be done automatically or manually. • It is not applicable to digital input.	AUTO	If AUTO is selected the image will automatically adjust

OSD Icon	Description	Sub-menu(s)	Controls and Adjustments		
 <p>IMAGE SET-UP CONT</p>	<p>If manual is selected, the user will go to the manual adjustment screen.</p>	<p>MANUAL</p> <ul style="list-style-type: none"> • Fine • Coarse 	<p>To adjust the focus of the display. This item allows you to remove any horizontal noise and clear or sharpen the image of characters. Fine adjustments should be done after adjusting the Coarse .</p>		
 <p>COLOR</p>	<p>Select the COLOR MODE you find most comfortable or fine tune the colors using the USER COLOR MODE menu, if necessary.</p>	<p>COLOR MODE</p>	<p>Preset 1 (Pink White)</p> <p>Preset 2 (Normal White)</p> <p>Preset 3 (Blue White)</p>	<p>USER COLOR MODE-</p> <ul style="list-style-type: none"> • Red • Green • Blue 	<p>Increases or decreases redness</p> <p>Increases or decreases greenness</p> <p>Increases or decreases blueness</p>
 <p>OSD Position</p>	<p>Changes the position of the OSD on the screen.</p>	<p>H-POSITION</p>			
		<p>V-POSITION</p>			

OSD Icon	Description	Sub-menu(S)	Controls and Adjustments
 RESET	Reset should return all available functions (apart from language which should not change unless adjusted via the LANGUAGE menu) to their factory presets.	<ul style="list-style-type: none"> • YES • NO 	
 H-POSITION	Moves the screen left and right . <ul style="list-style-type: none"> • Is not available with a digital input 		
 V-POSITION	Moves the screen up and down. <ul style="list-style-type: none"> • Is not available with a digital input 		
 OSD SIZE	Changes the size of the OSD menu on the screen.		<ul style="list-style-type: none"> • SMALL • MEDIUM • BIG
 Language	The language chosen affects only the language of the OSD. Select one of the five language to use for the OSD. It has no effect on any software running on the computer.		<ul style="list-style-type: none"> • ENGLISH • FRANCAIS • DEUTSCH • ITALIANO • ESPANOL
 OSD TIME	To select OSD display duration time. (5 - 60 seconds)		
 Information	<p>Display model name, serial number, year of manufacture and microcode level.</p> <p>Display all preset modes stored in the monitor.</p> <p>Display all user modes stored in the monitor.</p> <p>The current display mode will be shown at the base of all information screens.</p>		<ul style="list-style-type: none"> • INFORMATION • PRESET MODES • USER MODES <p>Use the ← and → buttons to move between information screens.</p>

Further Information

Display modes

***i** If your computer has previously been used with a CRT monitor and is currently configured to a display mode outside the range that the Flat Panel monitor can display, you may need to re-attach the CRT monitor temporarily until you have reconfigured the computer, preferably to 1024 x 768 at 60Hz.*

The display mode the monitor uses is controlled by the computer. Therefore, you should refer to your computer documentation for details on how to change display modes.

The image size, position and shape may change when the display mode changes. This is normal and the image can be readjusted using AUTO SETUP and the monitor controls.

Unlike CRT monitors, which require a high refresh rate to minimize flicker, TFT technology is inherently flicker-free. If possible, configure your computer for 1024 x 768 addressability at 60Hz vertical refresh rate.

For the display modes listed below, the screen image has been optimized during manufacture.

Factory Set Display Modes

Addressability	Refresh Rate	Horizontal Frequency
640 x 480	60 Hz	31.5 kHz
640 x 480	66 Hz	35.0 kHz
640 x 480	75 Hz	37.5 kHz
640 x 350	70 Hz	31.5 kHz
720 x 400	70 Hz	31.5 kHz
800 x 600	56 Hz	35.2 kHz
800 x 600	60 Hz	37.9 kHz
800 x 600	72 Hz	48.1 kHz
800 x 600	75 Hz	46.9 kHz
832 x 624	75 Hz	49.7 kHz
1024 x 768 †	60 Hz	48.4 kHz
1024 x 768	70 Hz	56.5 kHz
1024 x 768	75 Hz	60.0 kHz

† Recommended

Note : VESA timings are as detailed in the VESA “Display Monitor Timing Specification”. Version 1.0, Revision 0.8, Dated 09/17/98.

Power Management

To benefit from power management, the monitor must be used in conjunction with a computer that implements the Video Electronics Standards Association (VESA) Display Power Management Signaling (DPMS) Standard.

The power management feature is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period. There are several states as described in the table below.

As an ENERGY STAR 2000® Partner, **IBM** has determined that this product meets the ENERGY STAR 2000® guidelines for energy efficiency.


IBM recommends that you switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

State	Power Indicator	Screen	Restoring Operation	Compliance
On	Steady green	Normal		
Active off	Steady amber	Blank	Press a key or move the mouse.‡	ENERGY STAR 2000®

‡ There may be a slight delay before the picture reappears.

Troubleshooting

If you have a problem setting up or using your monitor, you may be able to solve it yourself. Before calling your retailer or IBM, try the suggested actions that are appropriate to your problem.

Problem	Possible Cause	Suggested Action	Reference
Screen is blank and power indicator is off.	No power to monitor.	<ul style="list-style-type: none"> • Ensure that the electrical outlet and the monitor are both switched on. • Check that the power cord is firmly plugged into the electrical outlet and the power supply unit. • If the power cord plug has a removable fuse, replace it. • Try another power cord. • Try another electrical outlet. • Check the power connection at the back of the panel. 	Connecting your Monitor section on page 4.
Screen is blank and power indicator is steady green.	Brightness and Contrast may be too low.	<ul style="list-style-type: none"> • Adjust brightness and contrast. 	User controls section on page 15.
Screen is blank and power indicator is steady amber.	The monitor is in the Power Management Standby state.	<ul style="list-style-type: none"> • Press any key on the keyboard or move the mouse to restore operation. • Check the Power Management software on your computer. • Press the  to switch between analog and digital mode. If the panel is the wrong mode for the signal being provided, the monitor appears to go into sleep mode. 	Power Management section on page 20.

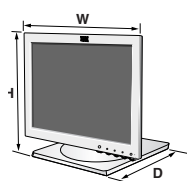
i For image problems, you may want to run **AUTO SETUP** again before consulting to this section. In most cases, **AUTO SETUP** can fix the problems. See **Auto Setup for the computer** on page 9 for details.

Problem	Possible Cause	Suggested Action	Reference
Screen is blank and power indicator is flashing green every 0.5 second	Display mode of the computer is outside the range of the monitor	<ul style="list-style-type: none"> Reconfigure key on the computer to use a supported display mode. 	Further Information section on page 19.
CHECK VIDEO CABLE message is shown and power indicator is steady amber.	The monitor is not receiving a video signal	<ul style="list-style-type: none"> Check that the signal cable is firmly connected to the computer. Check that no pins are bent in the signal cable connector. 	Connecting your monitor section on page 4.
Image appears to be smeared	There are noises in the video signal	<ul style="list-style-type: none"> Select IMAGE SET-UP menu in the OSD. Then select MANUAL to adjust FINE / COARSE settings. 	User Controls section on page 15.
Image appears to be discolored	The color setting may be incorrect.	<ul style="list-style-type: none"> Adjust the Color settings. 	User Controls section on page 15.
A few dots are missing, discolored, or inappropriately lighted.	The LCD contains over 2,300,000 thin-film transistors (TFTs). A small number of missing, discolored, or lighted dots may be present on the screen, which is an intrinsic characteristic of the TFT LCD technology and is not an LCD defect.		

Specifications

This color monitor (Type-model 9512-Hxx) uses a 15-inch TFT LCD.

***i** Power consumption figures are for the monitor and the power supply combined.*



Height:
13.37 inch(339.5 mm) - Min
18.29 inch(464.5 mm) - Max

Width:
14.38 inch(365.2 mm)

Depth:
10.19 inch(259.0 mm)

Weight	With Stand:	5.3 kg (11.68 lbs)
Image	Viewable Image Size: Maximum Height: Maximum Width: Pixel Pitch:	15-inch (381.0 mm) 304.1 mm 228.1 mm 0.297 mm (H) x 0.297 mm (V)
Power Input	Supply Voltage: Rated Current:	100 - 240 Vac 60/50 ± 3Hz 0.6A
Power Consumption	Normal Operation: Active off: Off:	< 35 W < 3 W < 1 W
Video Input	Input Signal:	Analog-75 ohm 0.7V Digital-DVI 1.0
	Horiz. Addressability: Vert. Addressability: Clock Frequency:	1024 pixels (max) 768 lines (max) 80 MHz (Digital) 80 MHz(Analog)
Sync Input	Type	Analog - Separate, Composite, SOG Digital-DVI 1.0
Communications	VESA DDC:	E-DDC
Supported Display Modes	Standard modes :	IBM, VESA, MAC
	Horiz / Vert Freq:	See Factory Set Display Modes on page 19. See Display Mode Ranges on page 24.
Environment	Temperature:	
	Operating:	10 to 35° C
	Storage:	- 20 to 60° C
	Shipping:	- 20 to 60° C
	Humidity:	
	Operating:	10 to 80%
Storage:	5 to 95%	
Shipping:	5 to 95%	

Display Mode Ranges

Addressability	Refresh Rate / Range (+ / - 3%)	Horizontal Frequency / Range (+ / - 3%)
640 x 480	58.2 ~ 61.8 Hz	30.56 ~ 32.45 kHz
640 x 480	64.0 ~ 68.0 Hz	33.95 ~ 36.05 kHz
640 x 480	72.8 ~ 77.3 Hz	36.38 ~ 38.63 kHz
640 x 350	67.9 ~ 72.1 Hz	30.56 ~ 32.45 kHz
720 x 400	67.9 ~ 72.1 Hz	30.56 ~ 32.45 kHz
800 x 600	54.3 ~ 57.7 Hz	34.14 ~ 36.26 kHz
800 x 600	58.2 ~ 61.8 Hz	36.76 ~ 39.04 kHz
800 x 600	69.8 ~ 74.2 Hz	46.66 ~ 49.54 kHz
800 x 600	72.8 ~ 77.3 Hz	45.49 ~ 48.31 kHz
832 x 624	72.8 ~ 77.3 Hz	48.21 ~ 51.19 kHz
1024 x 768	58.2 ~ 61.8 Hz	46.95 ~ 49.85 kHz
1024 x 768	67.9 ~ 72.1 Hz	54.81 ~ 58.20 kHz
1024 x 768	72.8 ~ 77.3 Hz	58.20 ~ 61.80 kHz